AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of the claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) A method of stopping an unmanned mine vehicle in a predetermined position, the mine vehicle being controlled by means of a control system comprising at least a first control unit in the mine vehicle, a second control unit outside the mine vehicle and a data transmission connection between said control units,

and the method comprising:

driving the mine vehicle, controlled by said control system, towards a predetermined position;

monitoring at least a speed of the mine vehicle and a speed of the driving power transmission of the mine vehicle,

driving the mine vehicle at a speed significantly lower than a normal driving speed and driving intentionally against at least one physical stationary obstacle that is arranged in a predetermined position wherein the mine vehicle collides with the obstacle;

and stopping the driving power of the mine vehicle when a ratio of the speed of the driving power transmission to the speed of the mine vehicle exceeds a predetermined limit value as a result of a tractive resistance caused by the obstacle resisting the proceeding of the mine vehicle after collision.

2. (Previously Presented) A method according to claim 1, comprising

monitoring the speed of traction wheels;

and stopping the mine vehicle when the ratio of the speed of at least one traction wheel to the speed of the mine vehicle exceeds a predetermined limit value.

3. (Previously Presented) A method according to claim 1, comprising

monitoring a rotation speed of a motor of the mine vehicle when the vehicle is driven at a given gear of a driving power transmission against the obstacle;

and stopping the mine vehicle when the ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined according to a gear used.

4. (Previously Presented) A method according to claim 1, comprising

driving the mine vehicle at a decelerating speed against the obstacle.

5. (Previously Presented) A method according to claim 1, comprising

driving at least one wheel of the mine vehicle against the obstacle.

6. (Previously Presented) A method according to claim 1, comprising

driving the frame of the mine vehicle against the obstacle.

7. (Currently Amended) A system for stopping an unmanned mine vehicle in a predetermined position, the system comprising:

a control unit including at least a first control unit in the mine vehicle;

a second control unit outside the mine vehicle;

a data transmission connection between said control units;

means for monitoring a speed of the mine vehicle and a speed of a driving power transmission of the mine vehicle,

at least one physical stationary obstacle arranged in a predetermined position, against which the mine vehicle is arranged to be driven intentionally and to collide with the obstacle;

and means for stopping a driving power of the mine vehicle when a ratio of the speed of the driving power transmission of the mine vehicle to a speed of the vehicle exceeds a predetermined limit value as a result of a tractive resistance caused by the obstacle resisting the proceeding of the mine vehicle after the collision.

8. (Previously Presented) A system according to claim 7, wherein

the system comprises members for monitoring speed of the traction wheels of the vehicle and for determining a speed of the driving power transmission.

9. (Previously Presented) A system according to claim 7, wherein

the system comprises means for monitoring a rotation speed of the motor of the mine vehicle;

and the system is arranged to stop the mine vehicle when a ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined according to a gear used.

10. (Currently Amended) A system for stopping an unmanned mine vehicle in a predetermined position, the system comprising:

a control system including at least a control unit in the mine vehicle;

at least one physical stationary obstacle arranged in a predetermined position, against which the mine vehicle is arranged to be driven intentionally and to collide with the obstacle;

means for determining tractive resistance of the mine vehicle when said obstacle is approached;

and means for stopping a driving power of the mine vehicle when the tractive resistance exceeds a predetermined limit value after the collision against the obstacle.

11. (Previously Presented) A system according to claim 10, wherein

the system comprises means for determining a speed of the mine vehicle;

the system comprises means for monitoring a rotation speed of a motor of the mine vehicle;

and the system is arranged to stop the mine vehicle when a ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined according to a gear used.

12. (Previously Presented) A system according to claim 10, wherein

the system comprises members for monitoring speed of the traction wheels of the vehicle and for determining a speed of the driving power transmission.

13. (Previously Presented) A system according to claim 7 wherein

the system comprises at least one physical stationary reference obstacle arranged in a location known to the control system,

and when the mine vehicle is driven against the reference obstacle in the known location, the location of the mine vehicle is updated for the control system.

14. (Previously Presented) A system according to claim 7 wherein

the mine vehicle is a wheel loader comprising a bucket for transporting broken rock material from a loading place to an unloading place,

the physical stationary obstacle is arranged in a predetermined distance from the unloading place,

and the wheel loader is driven against the physical stationary obstacle and bucket of the wheel loader is emptied.

15. (Previously Presented) A system according to claim 7, wherein

the system comprises at least one loading vehicle provided with a bucket and at least one transport vehicle provided with a platform,

the system comprises a loading site wherein the loading vehicle is arranged to load broken rock material to the transport vehicle,

the loading site comprises a first physical stationary obstacle against which the transport vehicle is driven and a second physical obstacle against which the loading vehicle is driven,

and the positions of the transport vehicle and the loading vehicle relative to each other is determined by the relative positions of the first and second physical stationary obstacles.